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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/551,466	04/17/2000	Sadao Takahashi	0557-4962-2	1714
22850	7590	03/17/2004	EXAMINER DASTOURI, MEHRDAD	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ART UNIT 2623	
			PAPER NUMBER	

DATE MAILED: 03/17/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/551,466

Applicant(s)

TAKAHASHI, SADA O

Examiner

Mehrdad Dastouri

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24, 27-52 and 55-68 is/are allowed.
- 6) ☒ Claim(s) 25, 26, 53 and 54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The IDS filed August 28, 2003, has been considered and made of record.
2. Applicants' amendment filed January 6, 2004, has been entered and made of record.
3. Applicant's arguments with respect to Claims 25, 26, 53 and 54 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25, 26, 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al., (hereinafter Wang), US 5,796,876, and further in view of Bellinghausen, US 4,599,656 and Scott, US 5,313,533.

As per claim 25, Wang teaches:

an image pickup unit which picks up an image of an object of a photograph
(Figure 1, Element 5, Column 4, Lines 20-25);

a screen division unit which divides the photographed object into a plurality of screens (line sensor, Figure 4, Column 4, Lines 33-50, each individual pixel can be considered a screen);

a photometry unit (CCD line sensor, Column 4, Lines 34-39) which measures light screens created by said screen division unit (Column 5, Lines 1-5);

a block division unit which divides a multi-valued image picked up by said image pickup unit into blocks (Column 5, Lines 50-60);

a binarization threshold value setting unit which sets binarization threshold values used when binarizing the multi-valued image (Column 6, Lines 3240);

a binarizing unit which binarizes a multi-valued image based on the binarization threshold values (Figure 2, Element 21);

a photometric value smoothing unit which smoothes the photometric values measured by said photometry unit (Figure 2, Elements 16, 17);

Wang does not specifically teach using the photometric smoothed values as the thresholding reference values, however, Bellinghausen teaches:

wherein said binanzation threshold value setting unit sets binarization threshold values of blocks created by said block division unit based on photometric values smoothed by said photometric value setting unit (Figure 5, Lines 1-6).

It would have been obvious to one of ordinary skill in the art to use the filtered gray values as the values to be used to threshold the image values because spurious signals have been eliminated due to filtering and also the shading correction performed by Wang provides a uniform photometric value from which to set the binary threshold thereby reducing computing time and also reducing imaging errors associated with the imaging device.

Neither Wang nor Bellinghausen disclose the binarization threshold value is set by multiplying the photometric values by a predetermined coefficient.

Scott discloses a system and method for bi-directional adaptive thresholding wherein the binarization threshold value is set by multiplying the photometric values by a predetermined coefficient (Abstract; Figure 6; Column 4, Lines 34-67, Column 5, Lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wang and Bellinghausen combination according to the teachings of Scott to set the binarization threshold value by multiplying the photometric values by a predetermined coefficient because it will enhance immunity to image noise and will reduce boundary artifacts.

As per Claim 26, neither Wang nor Bellinghausen teaches a screen size and block size being equal. However, such a design choice would have been within the skill of one of ordinary skill in the art and therefore is obvious as a design choice. Wang teaches scanning each pixel and shading correcting it to the proper value while also binarizing each pixel through block processing. Bellinghausen teaches using selected pixels for filtering and then using those for thresholding each individual pixel afterwards.

With regards to Claims 53 and 54, arguments analogous to those presented for Claims 25 and 26 are applicable to claims 53 and 54.

Other Prior Art Cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,583,659 to Lee et al.

Allowable Subject Matter

7. Claims 1-24, 27-52, 55-68 are allowed.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mehrdad Dastouri
Primary Examiner
Art Unit 2623
March 13, 2004

**MEHRDAD DASTOURI
PRIMARY EXAMINER**

Mehrdad Dastouri